

WHAT IS CLAIMED IS:

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1. A low cost high resolution digital camera comprising:

a two dimensional image plane within said camera toward which light from a three dimensional image is directed;

5 a high resolution sensor array spanning a first dimension of said image plane for generating image data;

an actuator for moving said high resolution sensor array through a second dimension of said image plane while said sensor array acquires image data at discrete distance intervals of said second dimension, thereby enabling said camera to acquire image data at discrete intervals along an entirety of said image plane.

2. The digital camera of claim 1, further comprising:

a control board for receiving said image data from said sensor array.

3. The digital camera of claim 1, wherein said image is remotely located from said camera.

4. The digital camera of claim 1, wherein said image changes with time.

5. The digital camera of claim 1, wherein said sensor array comprises:
a charge coupled device.

6. The digital camera of claim 5, wherein said charge coupled device comprises more than one thousand pixels.

7. The digital camera of claim 6, comprising:
a substantially straight line sensor array spanning the first dimension of said image plane; and
a linear actuator for moving said substantially straight line actuator linearly along the
5 second dimension of said image plane.

8. The digital camera of claim 7, wherein said linear actuator comprises:
an electric motor; and
a belt and pulley system.

9. The digital camera of claim 1, comprising:
a rotary actuator for rotating said sensor array through the second dimension of said image plane, wherein said rotation enables said sensor array to acquire image data at closely spaced intervals across an entirety of said image plane.

10. The digital camera of claim 1, wherein a package including said sensor array and said actuator is suitable for retrofitting into an existing camera thereby providing further cost savings.

11. The digital camera of claim 1, further comprising:
at least one additional high resolution sensor array spanning a first dimension of said image plane, thereby providing a plurality of high resolution sensor arrays, wherein said plurality of sensor arrays are moved through portions of said second dimension of said image plane to more rapidly complete image data acquisition at discrete intervals along the entirety
5 of said image plane.

12. A method for cost effectively generating digital data in a digital camera, the method comprising the steps of:

directing light from a remotely located image toward an image plane within said digital camera, wherein the image plane is a two dimension space in said camera toward which light from said image is directed, said image plane having first and second dimensions;

rapidly moving a high resolution one dimensional sensor array which spans the first dimension of said image plane through the second dimension of said image plane, thereby spanning said image plane as quickly as possible; and

converting light received by said one dimensional sensor array into digital image data at closely spaced intervals during said step of rapidly moving, thereby acquiring digital image data at closely spaced intervals in two dimensions along an entirety of said image plane, and generating two dimensional digital image data.

13. The method of claim 12, comprising the further step of:
transmitting said two dimensional digital image data to a storage device.

14. The method of claim 12, wherein said remotely located image is three dimensional.

15. The method of claim 12, wherein said step of rapidly moving comprises:

deploying a plurality of said high resolution one dimensional sensor arrays which span the first dimension of the image plane at evenly spaced locations across said second dimension of said image plane; and

5 rapidly moving each sensor array of said plurality of sensor arrays through a portion the second dimension of the image plane, thereby more rapidly acquiring image data for the entirety of the image plane, and minimizing a delay between a first conversion to digital data and a last conversion to digital data in said step of converting.

16. The method of claim 12, wherein said digital image data comprises:

brightness information; and

color information.

17. The method of claim 12, wherein:

said sensor array spans a linear dimension of said image plane; and

said step of moving comprises:

5 linearly moving said sensor array through a second dimension of said image plane thereby enabling acquisition of two dimensional image data across the entirety of said image plane.

18. The method of claim 12, wherein:

said sensor array spans a linear dimension of said image plane; and

said step of moving comprises:

5 rotating said sensor array through a second dimension of said image plane thereby enabling acquisition of two dimensional image data across the entirety of said image plane.

19. The method of claim 12, said step of moving comprising:

continuously moving said sensor array through said image plane thereby generating a sequence of digital still images in rapid succession enabling said digital camera to capture moving video image data.

20. The method of claim 12, wherein said step of converting light into digital image data is performed at different rates at different points during travel of said sensor array along said second dimension of said image plane.

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